

A FAMILY NEWSPAPER

SHELBYVILLE, KY., WEDNESDAY, APRIL 27, 1870.

Like the Celtic heroes of the front of the fight,  
They died on that red, rocky field.

And before me the banner of green;  
Then from Erin my country I'll never depart.

AN ADDRESS DELIVERED BEFORE  
THE FARMERS' CLUB OF SHELBY

Mr. President and Gentlemen of the

Meteorology in its ancient and etymological sense included all the

In its present sense it treats of the phenomena of the atmosphere, more especially in its relation to heat.

The action of the sun's rays is the efficient cause of all atmospheric changes. There are some proper

ness of the air, however, which are essential. Its mobility and its capacity for moisture are the most

of the atmosphere more or less heated, and more or less moist, the sci-

tionary the earth would be arid, barren and uninhabitable.

to another depend upon the fact, that the earth in its annual circuit around the sun, presents first one hemisphere

rays in such a manner, that whilst it is summer in the Northern Hemisphere it is winter in the Southern

If there were no disturbing influences on the earth's surface, the changes in the weather from one sea-

the northern hemisphere would blow directly from the north. But as the wind revolves from west to east it carries the wind from the north to the south of the equator in a blow from the S. E. These trade winds, as they are called, meet at the equator, or more correctly speaking at a point of the earth's circumference which is the most highly heated. By this means a reaction is calmed down, which might otherwise be violent. This is called the "temperatura aequi." When these winds meet, being highly heated, they ascend, after reaching an elevation of about 12,000 feet they are reflected towards the poles again, carrying with them the moisture which they have licked up from the earth. In this manner the winds are distributed to the continents for the purpose of sustaining animal and vegetable life. As these winds rise at the equator, each current does not return to the hemisphere from which it came, but

we remember that when two currents of air of different temperature mingle together, if the warmer current contains much moisture, it will be precipitated. Hence is explained spring an east wind during the winter and an east wind during a west wind is usually accompanied by rain or snow. It is a common observation that the same day of the week presents us with similar weather every after week. It has rained to-morrow during the past winter and every Sunday, with a few exceptions, during the past winter and spring. You may be asked, "how?" If you will observe in the manner in which the winds vary on a compass, you will be struck with the fact, that it takes its circuit in about 7 days or during a week, and some distance as the wind comes from the south, it is the same day in each week, it is no surprise that it should be accompanied by the same kind of weather.

In conclusion permit me to draw

The cause of this crossing is, of course, the purpose is evidently to give to the winds in the northern hemisphere a greater amount of moisture in the wind which comes from the southern hemisphere, which contains more water. As the demand is greater, so the supply is greater. The winds return from the equator to the N. Hem. in a S. W. direction in the N. Hem. and in a N. W. in S. Hem., for reasons already given. The trade winds blow in surface currents, only about 10° latitude north and south of the equator. It is quite probable that the counter current in the upper part of the ocean, moving in the N. W. (in N. Hem.) corresponds to the counter current in the S. W. (in S. Hem.) at an indolinite distance as the surface current toward the N. pole, arriving at the pole the wind again returns to the equator first as an upper current to the 30° of latitude, and then descending to the bottom, becomes the trade wind, blowing readily to the equator, in a westerly direction, in consequence of this peculiarity in the circulation of the air.

of the equator, corresponding to the 30° N. and S. latitude. Probably the two currents of air at these two points cross each other, they do at the equator.

The general factor for you bear in mind, so far as our present purpose is concerned, is that there are in all latitudes north of the equator two distinct currents of air, the one blowing in a N. E. direction towards the equator, the other blowing in a W. direction from the equator.

The winds in the temperate zones above 30° latitude are variable. In this section of Ky., is near the 38° latitude, and therefore above the northern extra-tropical crossing. The consensus of all facts pre- vailing wind here in summer is from the S. W., because you remember this current above the 30° becomes surface current, while the upper current, blowing toward the equator comes from the N. E. If there are no disturbing influences on the surface S. W. wind would prevail here regularly. But there are many and varied causes pertaining

oped by this process.

These gentlemen, are the great agencies which Providence in His wisdom has employed to equalize the temperature of the globe.

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**A Young Earthquake in New York.**

A very remarkable phenomenon occurred in Marcellus on Tuesday night, of which we have obtained the following particulars: A tract of land containing about three acres, lying upon both sides of the highway, and situated about four miles south of Marcellus village, at a place called Tyler's Hollow, was upheaved during the night by some subterranean force, the surface being piled into hillocks as high and as large as a house, and huge cracks and crevasses were opened, which

erty of soil in different localities, influencing the amount of heat absorbed and radiated affecting the amount and quality of the electric forces, the amount of water in different sections, and the ranges of mountains in different parts of the country, the weather is governed on the original course and becomes irregular. It seems that the further north any point is from the northern extra-tropical calm-belt the more irregular the winds become. This is because the air is at a great distance from the great central source of the regular rays of the sun in the tropics, and is therefore less affected by it, just a current of air in a room close to a stove is more regular and rapid than it is at a greater distance from it. In the summer the sun is in the northern tropic and he drags these calm-belt winds along the windward side with him. We are therefore nearer the calm-belt at this season, are more under the influences of the rain, consequently the S. W. wind prevails more regularly. It brings

which is precipitated on the earth, or it is well known that the rains of summer almost always come from the same point of the compass.

The wind in this latitude during the winter and spring cannot be said to prevail in any given direction, there seems to be such an equilibrium either of the temperature of the air or of the electric conditions, or of both, that in the air at these seasons, that the two currents mingle together from any slight cause existing on the surface of the atmosphere itself. The winds may sometimes drive down to the surface or drive the surface current above, so that there is veering of the wind around the compass. Neither of these winds prevail more than a few days or a week, and then the other prevails, and in consequence of this fact, the winds here at Berkeley are characterized with the mild warmth of the southern breeze, and then suddenly the north wind blows and chills the earth. Although there is great irregularity in the direction of the winds, there is a great degree of regularity, in

around the points of the compass. For instance it comes from the north, but it will probably come on the N. E. to morrow, thence will drift from the east. Then it soon veers round to the S. E. then to direct north, then it gradually flows from the S. W. then directly from the west. On another day it gets to the north, and usually to the north-east. This is the manner in which the wind veers around the points of the compass, and when it turns in an opposite manner, we may expect great agitation in the elements, storms, rain or snow.

From the fact just stated we observe, that the wind blows as well as west wind, is produced by the combined force of the two currents, the north and south currents. Now

and in time may they become useful and upright citizens, and honorable members of society. We ask in the name, and through the merits, of Christ our Redeemer, Amen."

Whereupon the member from Yelo arose and said: "Mr. President, I move to strike out 'Yelo county.'"

The seem which followed out can be better imagined, than described.

That was a pretty smart thing said by South the younger, the other sloppy day. He met Wiggles, who in his innocent way accused him with "Well South, this is real talk, give over here, you are the reply as the poker pushed this way along." I dare say it is in people who are going that way.

temperature zones the weather is variable during almost all seasons.

The air near the surface of the earth is warmer than the air above, and the higher we ascend the colder the air becomes. This fact is well attested by those who have ascended in balloons, and by the perpetual snow which covers the peaks of very high mountains. In regard to the rate of this decrease, and the law which governs it, much uncertainty prevails. In general terms the rate of decrease may be stated to be one degree for every 300 feet. Where we consider the fact that the earth is floating around the sun in space where temperature is intensely cold—not higher probably than 23° below zero—this fact does not so difficultly in accounting for the colder air in the higher regions.

The only difficulty in the case is to explain how the air near the earth is kept up to its present temperature. The causes which maintain this temperature are many. In the first place the earth is constantly being warmed by the sun, and the heat which it absorbs from the sun, and of course the nearer the stratum of air to the earth the more heat it receives.

sun will penetrate many substances which the heat radiated from any other source will not penetrate. In obedience to this law the rays from the sun penetrate the earth from the mass of air and reach the surface of the earth losing only about one third of the heat, which is absorbed in the atmosphere as they pass through it. But where the heat which is absorbed by the earth begins to be radiated back, it is not so easily able to penetrate the air, but soon accumulates in the lower stratum and thereby increases its temperature. There is another and a very powerful cause to which I wish specially to call your attention. The pressure of the atmosphere by its own weight tends to compress any substance which is compressed becomes heated. Any substance which is expanded

Our attention to the dynamic theory of heat. According to the old theory, heat is a material substance which combines in various proportions with other substances when brought into contact with them. The dynamic theory assumes, on the contrary, that heat is molecular motion in matter; that it is a property of matter, and not a substance or entity. Heat and motion are convertible into each other. If you strike a piece of lead the motion of the hammer is arrested at the surface of the lead, and is converted into heat. The mass motion of the hammer is transformed into molecular motion in the lead, and this body is heated.

All matter is in constant motion. There is no such thing as rest in nature. The doctrine that a body is at rest may be true for a moment, but it is not eternally true. It is evident from the constant change in the size of bodies, according to the temperature, that all matter is in a state of constant molecular motion. Any force which arrests this motion

the effect of the force which compresses any substance.

The air exerts a pressure on the surface of about 15 lbs to the square inch. This pressure is the effect of gravitation. The air is an elastic gas and is compressed by its own weight, so that the nearer the earth the greater the pressure and therefore the greater the degree of condensation. About each particle of air there is more and more condensed the motion in it is more and more arrested, and is converted into heat. The effect of this must be to elevate the temperature of the air near the surface where there is the greatest degree of condensation. At a distance you observe where the force of gravitation is converted into heat.

A very remarkable phenom-

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quake took place about midnight. But no noise was

the vicinity, of this remarkable occurrence, but nothing fur-

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